

REMARKS

Upon entry of the present amendment, claims 1-32 will remain pending. Claims 1, 4, 15, 20, 21, 28 and 29 will have been amended. Reconsideration of the Office Action of February 26, 2003 is respectfully requested.

The Examiner rejected claims 1-4, 8, 11-14, 20-23 and 25-32 under 35 U.S.C. § 102(e) as being anticipated by Chambers et al. (U.S. Patent No. 5,959,536). The Examiner asserted that Chambers et al. teaches the subject matter of claims 1-4, 8, 11-14, 20-23 and 25-32. Applicants respectfully traverse.

Each of independent claims 1, 20 and 28 recite, *inter alia*, that the control objects accept and issue control messages to and from their respective devices, are active while their respective device is functioning, maintains a list of all other registered control objects and their logical attributes (i.e., the information that the control objects maintain about their respective device), and are polymorphic (i.e., able to take on the characteristics of any device). Applicants submit that Chambers et al. fail to teach control objects having at least this combination of features of the invention.

In particular, the Examiner asserted that the Abstract Device of Chambers et al. is a control object (Office Action of Feb. 26, 2003 at p. 2). However, the Abstract Device of Chambers et al. is not polymorphic, as recited in Applicants' claims. Referring to col. 4, ll. 25-30, Chambers et al. teach that for each Class C device, its device abstraction is "compiled into machine-independent bytecode." Thus, the device abstraction is particular compiled for each. Further, device abstractions are defined to have "a core set of functionalities for a *given type* of

device...” (emphasis added) (col. 5, ll. 39-43). Absent from this teaching is that device abstractions are adapted to have a set of functionalities for *any type* of device.

Chambers et al. at col. 7, ll. 13-21, further reinforces that each device has its own device abstraction by stating:

For each real device 102-116 with consumer functionality, there is a device abstraction, termed the 'Abstract Device'. FIG. 2 shows an Abstract Device 202 downloaded to Class D device 114 from Class C real device 108. Abstract Device 202 has the responsibility of translating command messages (see below) it receives into actions on real device 108 it represents. Abstract Device 202 also has the responsibility of reporting status changes in real device 108 as event messages (see below). (emphasis added)

In view of the above, Applicants submit that Chambers et al. fails to teach or even suggest at least the control object recited in Applicants' claims. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. § 102(e).

The Examiner rejected claims 9, 10, 15-19 and 24 under 35 U.S.C. § 103(a) as being unpatentable over Chambers et al. in view of Perlman et al. (United States Patent No. 5,574,860). The Examiner asserted that Chambers et al. teaches all of the limitations of claims 9, 10, 15-19 and 24 with the exception of designating a first registered control object a manager object. In this regard, the Examiner asserted that Perlman et al. teaches designating a first registered control object a manager object, and that it would have been obvious to combine Chambers et al. with Perlman et al. to arrive at Applicant's claimed invention. Applicants respectfully traverse.

As noted above, Chambers et al. fail to teach “control objects” as recited in the claims of the instant invention. Again, the control objects have specifically recited characteristics that are not taught or suggested by Chambers et al. While Perlman et al. teach operational nodes that

elect a “designated node,” these nodes are not control objects, as recited herein. The designated node is not necessarily a first registered node, as a “better qualified” node than a presently designated node may be designated (see, col. 2, lines 58-67). Thus, Perlman et al. fails to remedy the deficiencies of Chambers et al. As such, any proper combination of Chambers et al. and Perlman et al. would fail to yield Applicants’ invention as recited in the claims. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. § 103(a).

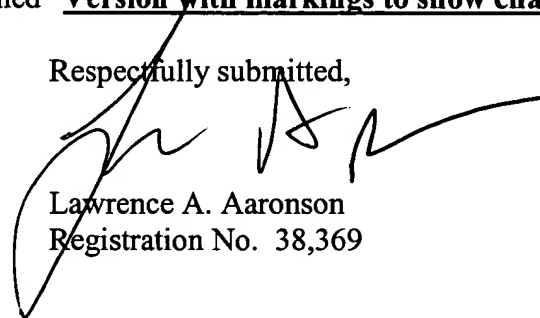
The Examiner rejected claims 5-7 under 35 U.S.C. § 103(a) as being unpatentable over Chambers et al. in view of Shteyn (United States Patent No. 6,199,136). Applicants respectfully traverse. Without addressing the propriety of the Examiner’s rejection of claims 5-7, Applicants note that claims 5-7 depend from claim 4, which depends from independent claim 1. For the reasons noted above, Applicants believe claim 1 is allowable over the prior art of record. As such, claims 5-7 are likewise allowable in view of the additional features claims 5-7 recite in combination with those of claims 1 and 4. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. § 103(a).

CONCLUSION

It is respectfully submitted that each and every claim pending in this application patentably defines over the prior art of record. For all the foregoing reasons, Applicant respectfully submits that the instant application is in condition for allowance. Reconsideration of the present Office Action and an early Notice of Allowance are respectfully requested.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 1, 4, 15, 20, 21, 28 and 29 have been amended as follows:

1. In a network comprising a plurality of software controllable devices that communicate over said network, said software controllable devices including or coupled to a computer-readable storage medium, a distributed system for controlling said devices, comprising:

at least one control object, said control object residing in said computer readable-medium accessible to a respective software controllable device and including logical attributes of said respective device, said control object accepting and issuing control messages to and from said respective device, and said control object being polymorphic such that said control object is adapted to take on the logical attributes and command and control capabilities of any of said devices; and

a user interface adapted to receive said control object, retrieve said logical attributes, and accept and issue control messages to and from said control object, said user interface residing in at least one of said software controllable devices,

wherein when said control object is enabled, said control object registers with said distributed system, wherein said control object is active while said respective one of said devices is functioning, and wherein said control object maintains a list of all other registered control objects and their logical attributes.

4. The system of claim 1, wherein said software controllable devices each include an operating system, said operating system including application programming interfaces to retrieve data from, and write data to, said control object, ~~and~~

~~wherein said control object is polymorphic such that said control object is adapted to take on the logical attributes and command and control capabilities of any of said devices.~~

15. In a system for controlling a plurality of software controllable devices represented by a plurality of control objects that maintain a list of logical attributes of respective ones of said devices, said control object accepting and issuing control messages to and from said respective ones of said devices, and said control object being polymorphic such that said control object is adapted to take on the logical attributes and command and control capabilities of any of said devices, a method of registering said control objects, comprising:

broadcasting a control message from an enabled control object to inform other registered control objects that said enabled control object exists;

determining if said enabled control object is a first registered control object; and
appointing said first registered object as a manager object to administer said list.

20. In a network comprising a plurality of software controllable devices that communicate over said network, said software controllable devices containing a computer-readable storage medium within which information is stored, a system for controlling said devices, comprising:

a plurality of control objects residing in said computer-readable medium of respective ones of said software controllable devices, said control objects including logical attributes of said respective ones of said devices, said control objects further accepting and issuing control messages to and from said respective ones of said devices, and said control objects being

polymorphic such that said control objects are adapted to take on the logical attributes and command and control capabilities of any of said devices,

wherein said control objects register with said system and is active while said respective ones of said devices are functioning, and wherein said control objects maintain a list of all other registered control objects and their logical attributes.

21. The system of claim 20, ~~wherein said control objects are polymorphic such that said control objects are adapted to take on the logical attributes and command and control capabilities of any of said devices, and~~ wherein said control objects are adapted to bind to any designed physical transport mechanism for communication with other control objects.

28. In a network comprising at least one software controllable device that communicates over said network and is remotely controllable over said network, said software controllable device containing a computer-readable storage medium within which state information is stored, a system for controlling said device, comprising:

a control object residing in said computer-readable storage medium, said control object including said state information of said device, said control object further accepting and issuing control messages to and from said device, and said control object being polymorphic such that said control object is adapted to take on the logical attributes and command and control capabilities of any device attached to said network,

wherein said control object registers with said system and is active while said device is functioning, and wherein said control object maintain a list of any other control object registered with said system and their logical attributes.

29. The system of claim 28, ~~wherein said control object is polymorphic such that said control object is adapted to take on the logical attributes and command and control capabilities of any device attached to said network, and wherein said control object is adapted to bind to any~~ designed physical transport mechanism for communication with other control objects.